REMARKS

Claims 2, 4-14, 16-21, 23-25 and 27-48, 50-54, and 56-70 are now pending in the application. By this paper, Claims 2, 4, 5, 7, 8, 11-14, 16, 17, 21, 27-29, 32, 33, 35, 36, 39-43, 50, 52-53, and 56 are amended, Claims 57-70 are new, and Claims 1, 3, 49, and 55 are cancelled without prejudice or disclaimer. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

Applicants' representatives thank the Examiner for the courtesies extended during the telephone interview of August 19, 2008. Claim 1, and a proposed amendment thereto, was discussed with respect to references Rossi et al., U.S. 6,701,725 and Shiiba et al., U.S. 6,629,008. The general thrust of the principal arguments of Applicants included that the cited references fail to teach or suggest generating a flow control device selection parameter based on a configured model. An agreement was not reached.

SPECIFICATION

The specification is amended to correct a typographical error. Specifically, "system capacity" is corrected to "evaporator capacity" as shown in corresponding Figure 45.

DOUBLE PATENTING

Claim 43 stands rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 12 and 13 of U.S. Patent No. 7,010,926. This rejection is respectfully traversed. Upon notice of allowable subject matter that is properly

subject to a double patenting rejection, Applicants agree to timely submit a terminal disclaimer.

REJECTION UNDER 35 U.S.C. § 103

Claims 1, 2, 3, 5, 6, 11, 12, and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rossi (U.S. Pat. No. 6,701,725) in view of Shiiba et al. (U.S. Pat. No. 6,629,008). This rejection is respectfully traversed. With respect to Claims 1 and 3, the rejection is rendered moot by cancellation without prejudice or disclaimer. With respect to Claims 2, 5, 6, 11, 12, and 13, each depends either directly or indirectly from Claim 57, which defines over the prior art as discussed below. Therefore, Claims 2, 5, 6, 11, 12, and 13 likewise define over the prior art.

Claims 43, 16-20, 23-25 and 44-48 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kumada (Japanese Laid Open Application No. H9-257319) in view of Scherer et al. (U.S. Pat. No. 3,708,998). This rejection is respectfully traversed.

Claim 43 recites a method of computer-based simulation of a cooling system, comprising inputting condensing unit parameters and evaporator parameters for the cooling system, with at least one of the condensing unit parameters and the evaporator parameters including configuration information for a heat exchanger of the cooling system, and the configuration information including a number of equivalent parallel refrigerant circuits information. The method also comprises inputting compressor parameters for the cooling system and inputting refrigerant properties for a refrigerant flowing through said cooling system. The method also comprises processing the condensing unit parameters, the evaporator parameters, the compressor parameters

and the refrigerant properties through a model of the cooling system and generating system outputs based on the processing. Kumada and Scherer et al. fail to teach or suggest the method recited by Claim 43.

The Examiner agrees that Kumada and Scherer et al. fail to teach the configuration information including a number of equivalent parallel refrigerant circuits information. *See* Office Action, 4/21/2008, p. 21, para. 13. With respect to limitations previously recited by now-cancelled Claim 55, the Examiner points to Kasai et al., U.S. 6,510,698. Kasai et al., however, simply describes a system of replacing a refrigeration system with a plurality of refrigerant circuits arranged in parallel. Kasai et al., however, is silent with respect to inputting configuration information for a heat exchanger, the configuration information including a number of equivalent parallel circuits and with respect to processing such configuration information through a model of a cooling system and generating system outputs based on the processing. Applicants respectfully note that a description of refrigeration circuits arranged in parallel is distinguishable from inputting configuration information for a heat exchanger including a number of equivalent parallel circuits and processing that configuration information through a model.

For at least these reasons, Claim 43 defines over Kumada, Scherer et al., and Kasai et al. Claims 16-20, 23-25 and 44-48 each either directly or indirectly depend from Claim 43 and likewise define over Kumada, Scherer et al., and Kasai et al.

Claims 8, 9, and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rossi (U.S. Pat. No. 6,701,725) in view of Shiiba et al. (U.S. Pat. No. 6,629,008) and Kagawa (U.S. Pat. No. 5,687,094). This rejection is respectfully traversed. Claims 8, 9, and 10 depend either directly or indirectly from new Claim 57, which defines over the prior art as discussed in detail below. Therefore, Claims 8, 9, and 10 likewise define over the prior art.

Claims 49, 27-31, 33, 34, 37-39, 41, and 52 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rossi (U.S. Pat. No. 6,701,725) in view of Singh (U.S. Pat. No. 6,990,821). This rejection is respectfully traversed. With respect to Claim 49, the rejection is rendered moot by cancellation without prejudice or disclaimer. With respect to Claims 27-31, 33, 34, 37-39, 41, and 52, each either directly or indirectly depends from Claim 65 which defines over the prior art as discussed below. Therefore, Claims 27-31, 33, 34, 37-39, 41, and 52 likewise define over the prior art.

Claim 36 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Rossi (U.S. Pat. No. 6,701,725) in view of Singh (U.S. Pat. No. 6,990,821) and Kagawa (U.S. Pat. No. 5,687,094). This rejection is respectfully traversed. Claim 36 depends from Claim 65, which defines over the prior art as discussed below. Therefore, Claim 36 likewise defines over the prior art.

Claims 4, 7, 14, and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rossi (U.S. Pat. No. 6,701,725) in view of Shiiba et al. (U.S. Pat. No. 6,629,008) and Pray (U.S. Pat. No. 4,885,694). This rejection is respectfully traversed. Claims 4, 7, 14, and 21 each depend either directly or indirectly from Claim 43, which defines over the prior art as discussed above, or Claim 57 which defines over the prior

art as discussed below. Therefore, Claims 4, 7, 14, and 21 likewise define over the prior art.

Claims 32, 35, and 42 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rossi (U.S. Pat. No. 6,701,725) in view of Singh (U.S. Pat. No. 6,990,821) and Pray (U.S. Pat. No. 4,885,694). This rejection is respectfully traversed. Claims 32, 35, and 42 each depend either directly or indirectly from Claim 65, which defines over the prior art as discussed in detail below. Therefore, Claims 32, 35, and 42 likewise define over the prior art.

Claim 40 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Rossi (U.S. Pat. No. 6,701,725) in view of Singh (U.S. Pat. No. 6,990,821). This rejection is respectfully traversed. Claim 40 depends from Claim 65, which defines over the prior art as discussed in detail below. Therefore, Claim 40 likewise defines over the prior art.

Claims 50, 51, 53, and 54 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rossi (U.S. Pat. No. 6,701,725) in view of Singh (U.S. Pat. No. 6,990,821) and Kumada (Japanese Laid Open Application No. H9-257319). This rejection is respectfully traversed. Claims 50, 51, 53, and 54 each depend either directly or indirectly from Claim 69, which defines over the prior art as discussed in detail below. Therefore, Claims 50, 51, 53, and 54 likewise define over the prior art.

Claim 55 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kumada (Japanese Laid Open Application No. H9-257319) in view of Scherer et al. (U.S. Pat. No. 257319) and Kasai et al. (U.S. Pat. No. 6,510,698). This rejection is

respectfully traversed. The rejection is also rendered moot by cancellation without prejudice or disclaimer.

Claim 56 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Rossi (U.S. Pat. No. 6,701,725) in view of Singh (U.S. Pat. No. 6,990,821) and Kasai et al. (U.S. Pat. No. 6,510,698). This rejection is respectfully traversed. Claim 56 depends from Claim 69, which defines over the prior art as discussed in detail below. Therefore, Claim 56 likewise defines over the prior art.

Reconsideration and withdrawal of the rejections are respectfully requested.

NEW CLAIMS

Claim 57 recites a method comprising receiving condenser parameters, evaporator parameters and compressor parameters of a cooling system and configuring a model of the cooling system according to the condenser parameters, the evaporator parameters and the compressor parameters. The method further comprises generating at least one flow control device selection parameter with a computer simulation of the cooling system based on the configured model. The method further comprises outputting at least one flow control device that corresponds to the at least one flow control device selection parameter generated by the computer simulation. The prior art fails to teach or suggest the method recited by Claim 57.

For example, Rossi et al. describes a method for estimating efficiency and capacity of a refrigeration, air conditioning or heat pump system operating under field conditions by measuring four system parameters and calculating performance parameters based on measurements. Rossi et al., Col. 2, Lines 14-18. In Rossi et al.,

manufacturer's data is used to determine whether a compressor is performing within the manufacturer's specification. Rossi et al., Lines 16-15. Rossi et al. is silent, however, as to generating at least one flow control device selection parameter with a computer simulation of a cooling system based on a configured model, and outputting at least one flow control device that corresponds to the at least one flow control device selection parameter generated by the computer simulation, as recited by Claim 57.

Shiiba et al. describes a production control system whereby a customer selects a required specification from an order menu to determine a customized product. Shiiba et al., Title and Abstract. In Shiiba et al., a customized product is selected among standard and optional specifications. Shiiba et al., Col. 4, Lines 13-15. As shown in Figure 5 of Shiiba et al., pipe models are listed with symbols corresponding to various customized specification options. Shiiba et al., Col. 8, Lines 1-12.

Shiiba et al. is silent, however, as to configuring a model of a cooling system according to condenser parameters, evaporator parameters and compressor parameters, generating at least one flow control device selection parameter with a computer simulation of the cooling system based on the configured model, and outputting at least one flow control device that corresponds to the at least one flow control device selection parameter generated by the computer simulation, as recited by Claim 57.

Kumada describes a data file for storing specification and characteristic computation formulas for a compressor and heat exchanger and a simulation program for executing a simulation based on the specification and characteristic computation formulas. Kumada, Abstract. Kumada is silent, however, as to generating at least one

flow control device selection parameter with a computer simulation of the cooling system based on the configured model and outputting at least one flow control device that corresponds to the at least one flow control device selection parameter generated by the computer simulation, as recited by Claim 57.

Pray et al. describes a computer system for automating a design of a building control system. Pray et al., Abstract. In Pray et al., a sizing program is described that prompts a user for device specification information, such as a valve model number or an actuator model number, or job requirement information, such as water flow in gallons per minute, desired pressure drop through the valve, and desired valve closeoff range. Pray et al., Col. 15, Lines 8-16. Pray et al. is silent, however, as to configuring a model of a cooling system according to condenser parameters, evaporator parameters and compressor parameters, generating at least one flow control device selection parameter with a computer simulation of the cooling system based on the configured model, and outputting at least one flow control device that corresponds to the at least one flow control device selection parameter generated by the computer simulation, as recited by Claim 57.

As such, the prior art fails to teach or suggest the method recited by Claim 57, which is believed to be in condition for allowance.

Claim 65 recites a method comprising receiving condenser parameters, evaporator parameters and compressor parameters for a cooling system and receiving an dry bulb temperature. The method further comprises receiving at least one first air property input including at least one of a wet bulb temperature, a relative humidity, a humidity ratio, a specific volume, an enthalpy, and a dew point temperature. The

method further comprises calculating at least one second air property input based on the dry bulb temperature and the at least one first air property input. The at least one second air property input includes at least one of the wet bulb temperature, the relative humidity, the humidity ratio, the specific volume, the enthalpy, and the dew point temperature. The method further includes configuring a model of the cooling system according to the condenser parameters, the evaporator parameters, the compressor parameters, the at least one first air property input, and the at least one second air property input. The method further includes generating an output with a computer simulation of the cooling system based on the configured model. The prior art fails to teach or suggest the method recited by Claim 65.

As discussed above, Rossi et al., describes a method for estimating efficiency and capacity of a refrigeration, air conditioning or heat pump system operating under field conditions by measuring four system parameters and calculating performance parameters base don measurements. Rossi et al., Col. 2, Lines 14-18. Rossi et al. is silent, however, as to receiving at least one first air property input including at least one of a wet bulb temperature, a relative humidity, a humidity ratio, a specific volume, an enthalpy, and a dew point temperature, calculating at least one second air property input based on an dry bulb temperature and the at least one first air property input, the at least one second air property input including at least one of the wet bulb temperature, the relative humidity, the humidity ratio, the specific volume, the enthalpy, and the dew point temperature. Rossi et al. is likewise silent as to configuring a model of a cooling system according to condenser parameters, evaporator parameters, compressor

parameters, at least one first air property input, and at least one second air property input, as recited by Claim 65.

With respect to Singh et al., a system and method for managing energy consumption of a building system is described. Singh et al., Abstract. Singh et al., describes that refrigeration and HVAC models functionally relate compressor energy consumption and condenser energy consumption for an air-cooled condenser with outdoor dry bulb temperature or compressor kilowatt hours and condenser power for a water-cooled condenser with outdoor wet bulb temperature. Singh et al., Col. 7, Lines 58-63. Singh et al. is silent, however, as to as to receiving at least one first air property input including at least one of a wet bulb temperature, a relative humidity, a humidity ratio, a specific volume, an enthalpy, and a dew point temperature, calculating at least one second air property input based on an dry bulb temperature and the at least one first air property input, the at least one second air property input including at least one of the wet bulb temperature, the relative humidity, the humidity ratio, the specific volume, the enthalpy, and the dew point temperature. Singh et al. is likewise silent as to configuring a model of a cooling system according to condenser parameters, evaporator parameters, compressor parameters, at least one first air property input, and at least one second air property input, as recited by Claim 65.

As such, the prior art fails to teach or suggest the method recited by Claim 65, which is believed to be in condition for allowance.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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